

Motor learning, rood's, ndt, pnf techniques



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Principles of Motor Learning ART - Skill Acquisition, Retention, and

Transfer Stage 1: Skill Acquisition Stage (Cognitive Stage) Occurs during initial instruction and practice of a skill, involves " what to do" decisions

MOTOR LEARNING, ROOD' S, NDT, PNF TECHNIQUES SPECIFICALLY FOR YOU FOR

ONLY \$13.90/PAGE Order Now Stage 2: Skill Retention Stage (Associated

Stage) Involved " carry over" as individuals are asked to demonstrate their newly acquired skill after initial practice, involves " how to do decisions"

Stage 3: Skill Transfer Stage (Autonomous Stage) Involved the individual demonstrating the skill in a new CONTEXT; involves " how to succeed" decisions

Principles of Rood's Approach (1) Utilization of controlled sensory stimulation, (2) Utilization of developmental sequences, (3) Utilization of

activity to demand a purposeful response (4) Normalization of tone and

muscular responses are achieved via controlled sensory stimulation (5)

Sensorimotor control is developmentally based, (6) Muscular responses of

the agonists, antagonists, and synergists are believed to be reflexively

programmed according to a purpose or plan, and (7) Repetition/practice is

necessary for motor learning Rood's Four Sequential Phases of Motor

Control (1) Reciprocal inhibition/innervation, (2) Co-contraction: Simultaneous

contraction of the agonist and antagonist that provide stability in a static

pattern, (3) Heavy work, and (4) Skill: Stabilized proximal segment while

distal segments move in space NDT/Bobath Principles Normalization of

postural and limb tone, normalization of movement patterns, integration of

both sides of the body, establishment of the ability to WEIGHT BEAR and

WEIGHT SHIFT through the limbs, establishment of normal righting and

equilibrium patterns, utilization of specific " handling" techniques to promote

normal movement, inhibition of primitive reflexes, avoidance of movements

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and activities that increase tone, inhibition of abnormal postural and limb movements, development of normal patterns of posture and movement, re-establishment of symmetry of the sides of the body to increase functional use, improvement in the quality of movement and performance of the involved side, normalization of tone is a pre-req to normal movement (abnormalities include flaccidity and spasticity), associated reactions (nonfunctional and involuntary changes in the uninvolved limb position and tone) should be avoided, postural reactions are considered the basis for control of movement (i. e., righting, equilibrium, and protective responses), loss of postural control results in overuse of the sound side and limits functional movements, stereotypical patterns of the trunk and limbs observed in persons with CNS dysfunction are viewed as abnormal patterns of motor coordination, and focus is on improving the quality of movement

NDT Interventions

HANDLING is the hallmark of NDT, utilize "key points of control" (i. e., weightbearing through the involved trunk and limb to inhibit spastic patterns as well as to facilitate underactive muscle groups), establish the ability to weightshift symmetrically in various postures in all directions, retrain ADLs and mobility skills integrating both sides of the body while limited abnormal responses (associated reactions, etc.), and utilize bilateral movement patterns to integrate both sides of the body into function

PNF Technique: Slow Reversals Utilized to gain ROM; alternating isotonic contractions of antagonists

PNF Technique: Rhythmic Stabilization Simultaneous isometric contraction of antagonists, which results in cocontraction, thereby promoting stability

PNF Technique: Contract-Relax Isometric contraction of the antagonist, relaxation, then PASSIVE movement of the agonistic pattern by the OT, with the goal of increasing

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ROMPNF Technique: Hold-Relax Isometric contraction of the antagonist, relaxation, then ACTIVE movement of the agonist by the individual, with the goal of increasing MOBILITY

PNF Technique: Rhythmic Rotation Used when a restriction is felt during range of motion; when the restriction is felt, the OT repeats rotation of all components of the pattern at the point of restriction, slowly and gently; as the relaxation response occurs, the movement is continued throughout a larger range

Brunnstrom's 6 Stages of Motor Recovery

- (1) Flaccidity or no voluntary motion,
- (2) Developing synergies,
- (3) Beginning voluntary movement within the synergy pathways,
- (4) Initial movements that deviate from synergy,
- (5) Independence from the basic synergies,
- (6) Isolated, near normal movement with minimal spasticity